Section 2. Objectives

The NMSC established key elements to the Strategy which it deemed to be crucial to an effective program. These included a set of objectives (e.g., what the Strategy is intended to accomplish, as delineated in the Section 2.1, below), specific components (e.g., what are the key functions that need to occur [presented in Section 1]), attributes to some of the components (e.g., what the components are intended to accomplish, as given in Section 4), and an overriding set of operating principles (e.g., what are the constraints which must be considered [presented in Section 1]). Together, these formed the complete framework for the Strategy, from which the details evolved.

2.1 Objectives for the Strategy

The NMSC has developed 12 objectives for the Strategy, as follows:

- To manage the Nation's air monitoring networks in a manner that addresses the most pressing public health issues, optimizes efficiency, and accommodates future needs, all within the constraints of the available funding.

- To establish a new air monitoring paradigm coupling a minimum level of required national monitoring with flexible SLT air monitoring networks in order to efficiently and effectively meet both national and SLT needs.

- To provide a greater degree of timely (e.g., real-time) public air quality information, including the mapping of air pollution data and air quality forecasts.

- To promote network efficiencies through the reevaluation of regulations and quality assurance procedures.

- To foster the utilization of new measurement method technologies.

- To provide a mechanism for the periodic assessment, from both a national and local/regional perspective, of all air monitoring activities to help ensure the relevance and efficiency of the network. (This mechanism should provide appropriate flexibility to disinvest in monitoring activities should changing priorities so warrant.)

- To encourage multi-pollutant measurements, where appropriate, for better air quality management and scientific/health-based data sets.

- To provide a base air monitoring structure which, in conjunction with special studies (not part of this Strategy), could be used to support certain regulatory needs, e.g., SIP development, source apportionment, operational model evaluation, and tracking progress of emissions reduction strategies.

- To develop and implement a major public information and outreach program as an important cornerstone toward network changes.

- To seek input from the scientific community as to the merit/value of proposed changes.

- To provide air monitoring platforms and data bases which can be used for other environmental purposes, such as area-based ecosystem assessments, global issues, diagnostic research, and biological sensing.

- To assess, periodically, funding levels needed to maintain support for this monitoring strategy, and incorporate recommendations into the budget planning process.

2.2 Basic Network Objectives

The Strategy encompasses many elements, though the air monitoring portion is the central component. Therefore, the national monitoring strategy requires a clearly defined set of network objectives as a foundation for assessing current networks, establishing monitoring priorities, and articulating a vision for future direction. These objectives are more focused on the actual use of ambient data, in contrast to the wide spectrum of objectives associated with the monitoring strategy, as specified above. Monitoring data provide value to air quality planning, the public, and other information users, such as the research, academic and business/industrial communities.

Ambient data from the regulatory-based networks administered primarily through the Federal CAA section 105 and 103 grant process should address a variety of air quality program needs that include:

- **Compliance:** Comparing air quality data to NAAQS or other benchmarks which drive regulatory actions. For example:

    - determining attainment/nonattainment status
    - establishing baseline and progress measures for regional haze

- **Public awareness/population exposure**: Data to support the air quality index (AQI) and AIRNow, and population risk and exposure assessments. For example:

    - providing timely information to the media
    - forecasting pollutant conditions
    - relating risks to health benchmarks for hazardous air pollutants
    - providing data in response to environmental justice and related public issues

- evaluating air quality simulation models for assessing impacts to the local population

- **Detecting air quality trends and evaluating progress of emissions reduction programs**: Data to detect long term air quality trends and to capture measurable ambient impacts (including emissions precursors and secondarily formed pollutants) associated with emissions reduction programs. For example:

  - assessing accountability for progress toward cleaner air
  - determining the effectiveness of regional haze mitigation efforts
  - understanding visibility-impairing components to regional haze for adequate progress assessments
  - determining if permitting requirements are sufficient to meet rate-of-progress or maintenance-level commitments
  - reporting of trends data to the public

- **Emission strategy development**: Data to support construction of emission reduction programs in support of State Implementation Plans (SIPs), air toxics and environmental welfare/secondary effects programs (e.g., visibility impairment, watershed degradation). [Note: This objective, although similar, is delineated from the previous objective, as the types of monitoring approaches often are specific to the tool (e.g., model) being applied. In many instances, emphasis is put on a short term (e.g., up to 1 year) period of data collection to support model applications, whereas trends and program evaluation almost always demand a long term data record.] For example:

  - supporting source-apportionment and other observational models
  - evaluating simulation models for predicting future air quality
  - defining background, transport, and model boundary conditions
  - evaluating emission inventories
  - assisting in the determination of multi-media (e.g, air, water, and soil) impacts of pollution

- **Research**: Data to assist research programs. [Note: Research support is not a primary objective of the Nation's regulatory networks. However, the regulatory networks provide an important infrastructure that often is leveraged with other research resources that benefit air quality research and eventually regulatory programs.] For example:

  - developing associations between measurements and adverse health indicators
  - describing physical/chemical processes
  - testing and evaluating advanced sampling methods
  - supporting studies on health effects and human exposure
  - supporting development of advanced simulation models
  - supporting the better understanding of atmospheric processes

2.3 Relationship to Existing 40 CFR Part 58 Monitoring Regulations

The existing monitoring regulations also list a set of objectives, located in the Code of Federal Regulations (CFR) 40 part 58, Appendix D for the existing SLAMS network, of which the NAMS are considered a subset. These include:

- determining highest concentrations
- determining representative concentrations
- determining impact on ambient levels due to emission sources
- determining regional transport
- determining welfare-related impacts in rural areas

In addition, the CFR lists several objectives for PAMS:

- for NAAQS attainment and control strategy development
- for SIP control strategy evaluation
- for tracking emissions
- for determining trends
- for identifying airshed boundary concentrations
- for air quality model evaluation
- for ozone and air toxics exposure

These objectives for the combined NAMS/SLAMS/PAMS networks are consistent with those articulated previously, illustrating stability and confirmation in the basic uses and purposes of monitoring data. Although consistencies exist between the objectives stated in Section 2.1 and the regulations, the revised objectives provide a more tractable and realistic group of expectations that incorporate more recent thinking on monitoring science. (For a more detailed discussion of changes to regulations in support of the Strategy, see Section 8.)